Complete Summary

GUIDELINE TITLE

Preservation of peripheral veins in patients with chronic kidney disease.

BIBLIOGRAPHIC SOURCE(S)

Association for Vascular Access (AVA), American Society of Diagnostic and Interventional Nephrology (ASDIN). Preservation of peripheral veins in patients with chronic kidney disease. Herriman (UT): Association for Vascular Access (AVA); 2008. 4 p. [7 references]

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Chronic kidney disease

GUIDELINE CATEGORY

Counseling
Evaluation
Management

CLINICAL SPECIALTY

Nephrology
Surgery

INTENDED USERS

Advanced Practice Nurses
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To provide a simple criterion for the early identification of patients with chronic kidney disease who are likely to need a hemodialysis fistula or graft in the future
- To provide nurses and other health care professionals with a simple criterion to identify patients who should undergo a comprehensive vascular access assessment to determine the optimal strategy prior to venipuncture or insertion of a venous access device

TARGET POPULATION

Patients with chronic kidney disease who have an estimated glomerular filtration rate (eGFR) of less than 60 mL/min/1.73 m^2 or a serum creatinine level of greater than 2.0 mg/dL

INTERVENTIONS AND PRACTICES CONSIDERED

Evaluation

Vascular access assessment

Management

1. Patient and staff education regarding indiscriminate venipuncture
2. Patient referral to vascular access specialist
3. Guidelines for vascular access
    - Peripheral venous access
    - Central venous access
    - Peripherally inserted central catheters (PICC) were considered but not routinely recommended

MAJOR OUTCOMES CONSIDERED

Not stated

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The guideline developers used Medline and CINAHL electronic databases to collect up to date information.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Not stated

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not applicable

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Position Statement

The American Society of Diagnostic and Interventional Nephrology/Association for Vascular Access (ASDIN/AVA) Joint Clinical Practice Committee recommends that patients with an estimated glomerular filtration rate (eGFR) of less than 60 mL/min/1.73 m^2, or if an eGFR is not available then a serum creatinine level of greater than 2.0 mg/dL, should undergo an expert vascular access assessment prior to placement of any vascular access device.

The purpose of this recommendation is to provide a simple criterion for the early identification of patients with chronic kidney disease who are likely to need a hemodialysis fistula or graft in the future. For patients who meet this criterion a comprehensive vascular access plan should be discussed with the patient's nephrologist and other members of the health care team prior to venipuncture or insertion of a venous access device. These patients should receive education about the importance of vein preservation and specific instructions regarding their role in protection of their peripheral veins. Medical alert bracelets that identify the patient as having chronic kidney disease and warn against indiscriminant venipuncture should be considered.

Collaborative Patient Management

Optimal management of venous access in patients with chronic kidney disease necessitates involvement of the patient's entire health care team including; 1) the nurses directly caring for the patient, 2) the physician requesting venous access, 3) the nurses and physicians responsible for placement of peripheral venous access devices, 4) the nephrologist managing the patient's kidney disease, and 5) the surgeon responsible for creating arteriovenous access. The nursing staff plays a pivotal role in the identification of patients who need specialized venous access care. It is imperative that nurses receive education and guidance to fulfill this role and to ensure their ability to refer appropriate patients to a vascular access specialist. Furthermore, each health care system should implement policies and procedures to encourage collaboration between these key providers and offer timely services for placement of the appropriate venous access device.

Currently there are no nationally recognized policies or guidelines which address the need for specialized venous access care in patients with chronic kidney disease. The American Society of Diagnostic and Interventional Nephrology/Association for Vascular Access (ASDIN/AVA) Joint Clinical Practice Committee proposes the following:

Guidelines for Venous Access in Patients with Chronic Kidney Disease

For patients with chronic kidney disease stage-3 or greater (eGFR of less than 60 mL/min/1.73 m^2) or a serum creatinine level greater than 2.0 mg/dL:

1. When suitable anatomy is present, the dorsal veins of the dominant hand are the preferred location for venipuncture and for immediate short-term use and selected non-injurious infusion therapies.
2. The forearm veins, upper arm veins and subclavian veins are of critical importance for creation of a hemodialysis fistula and these veins should not be routinely used for venous access procedures, including peripherally inserted central catheters. These veins should be used only when preferred veins are not available or if requirement for future hemodialysis vascular access is determined to be unlikely.
3. Alternative long-term venous access solutions should be identified and implemented as soon as possible, avoiding prolonged reliance on limited peripheral veins.
4. The internal jugular vein is the preferred vessel for central venous access. Central venous catheters inserted via the internal jugular vein that are intended for long-term use (>1 week) should be placed using a subcutaneous tunnel.

When central venous access is needed a small diameter (<8 French unites [Fr.]) catheter should be inserted into the internal jugular vein. Placement of central venous catheters using a subcutaneous tunnel has been shown to reduce the incidence of catheter related bloodstream infection and is recommended by Centers for Disease Control guidelines for prevention of catheter-related infections. Furthermore, tunneling from the neck to an exit site on the anterior chest wall below the clavicle results in venous access that is more comfortable for the patient, physically secure, easier to cover and care for by nursing staff, and suitable for hospital discharge. The recommendation to avoid use of the subclavian vein is a relative one. If the patient's upper extremity veins have been thoroughly evaluated using ultrasound or venography and found to be not suitable for a hemodialysis graft or fistula, then the ipsilateral subclavian vein may be utilized for central venous access procedures.

A peripherally inserted central catheter (PICC) should not be routinely used in patients with chronic kidney disease. The decision to insert a PICC in these patients should be guided by medical necessity rather than convenience. A preferable alternative is a small diameter catheter inserted via the internal jugular vein. However, a PICC may be an appropriate venous access device for a subgroup of these patients with chronic kidney disease including patients with a short life expectancy, previous failures of arteriovenous access, or severe peripheral arterial disease for whom there is no possibility of future fistula construction in that limb.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting the recommendations is not specifically stated.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Prevention of indiscriminate venipuncture and optimal management of venous access in patients with chronic kidney disease
- Preservation of upper extremity peripheral veins for future dialysis access in patients with chronic kidney disease

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

It is recognized that venipuncture and peripheral venous catheters are common procedures which are necessary and beneficial for many patients. A policy which restricts the use of peripheral veins in all patients with chronic kidney disease would be untenable in many health care environments. This position statement is not intended to prohibit the use of peripheral veins in all patients with chronic kidney disease.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Association for Vascular Access (AVA), American Society of Diagnostic and Interventional Nephrology (ASDIN). Preservation of peripheral veins in patients with chronic kidney disease. Herriman (UT): Association for Vascular Access (AVA); 2008. 4 p. [7 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2008

GUIDELINE DEVELOPER(S)

American Society of Diagnostic and Interventional Nephrology - Professional Association
Association for Vascular Access - Professional Association

SOURCE(S) OF FUNDING

Association for Vascular Access

GUIDELINE COMMITTEE

American Society of Diagnostic and Interventional Nephrology/Association for Vascular Access (ASDIN/AVA) Joint Clinical Practice Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available to subscribers from the Association for Vascular Access Web site.

Print copies: Available from the Association for Vascular Access, 5526 West 13400 South Ste #229, Herriman, UT 84096. Phone: 1-877-924-AVA1 (2821).

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

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